IN THE CLAIMS:

Please amend the following claims:

1. (Currently Amended) A process for the wet fractionation of cereal bran components, wherein bran being the fibrous-residue resulting from a primary grain milling, i.e. after the separation of the endosperm fraction, of wheat, barley, oat, rye and triticale, and having a variable chemical composition, a presence of anti-nutritive factors, and various anatomical fractions, i.e. pericarp, germ, and residual endosperm is ~~first~~ subjected to a first ~~combination of~~ enzymatic treatment ~~with~~ utilizing a combination of enzymes of the group starch- ~~and phytate-~~ hydrolysing enzymes, and aqueous wet milling, followed by an optional step of enzyme inactivation by wet heat treatment, and a subsequent step whereby the resultant aqueous slurry/suspension is separated into an insoluble ~~phase containing a cleaned bran consisting of both pericarp and aleurone fractions are~~ fibrous fraction and a soluble fraction, and wherein said soluble fraction is further separated by centrifugal forces into ~~an aqueous phase containing~~ a germ-rich fraction and ~~a further aqueous phase containing residual~~ an endosperm ~~components,~~ and sugar-rich fraction, and that the proteins and sugars contained in the endosperm-rich fraction are ~~concentrated~~ separated, and;

said insoluble fibrous fraction containing a cleaned bran consisting of both insoluble pericap and aleurone fractions, is further hydrolysed by a second enzymatic treatment utilizing a combination of one or a mixture of enzymes of the group non-starch polysaccharidases, and aqueous wet-milling, followed by an optional step of enzyme inactivation by wet heat treatment, and a subsequent step whereby the resultant hydrolysate is separated into an insoluble phase and a soluble phase.

2. (Canceled)

3. (Currently Amended) A process according to claim 1, wherein the first enzymatic treatment is accomplished using a starch degrading enzyme of the ~~group of~~ groups amylases and amyloglucosidases.

4. (Currently Amended) A process according to claim 1, wherein ~~a further~~ the second enzymatic treatment is carried out using at least one non-starch degrading polysaccharidase in the form of cellulases, hemicellulases mainly xylanases, beta-glucanases, and pectinases, and/or phytases.

5. (Canceled)

6. (Currently Amended) A process according to claim [[5]]1, wherein the ~~inactivated~~ insoluble phase obtained from the hydrolysate ~~is then fractionated by centrifugal forces into an insoluble phase~~ and containing primarily insoluble fibers, i.e. cellulose, lignin, less accessible hemicellulose, residual aleurone cells and cell wall bound proteins is spray dried, and;

~~an aqueous~~ the soluble phase containing soluble hemicellulose, oligosaccharides, sugars and proteins, and ~~that the aqueous~~ said soluble phase is further separated ~~by centrifugal force into protein rich fraction and a carbohydrate rich fraction, and that the carbohydrate rich fraction~~ is into a heavy phase containing mainly aleurone cell protein and a light phase containing hemicellulose in the form of soluble hemicellulose and oligosaccharides, and;

said light phase is further separated by size exclusion technique into [[a]] soluble hemicellulose-rich ~~rich fraction~~ (medium molecular size fraction) and ~~an oligosaccharide rich fraction~~ oligosaccharides mixed with sugars (small molecular size fraction).

7. (Currently Amended) A process according to claim [[5]] 1, wherein cleaned bran cereal bran substantially free of both in water or less polar solvents soluble compounds, [[are]] derived from wheat, rice, barley, oat, rye or triticale.

8. (Previously Presented) A process according to claim 1, wherein the combination of intermittent wet milling with enzymatic treatment is arranged to increase the rate of enzymatic hydrolysis of the substrate thereby improving the overall hydrolysis performance and the subsequent separation of the various fractions by density/solubility and molecular size.

9. (Canceled)

10. (Previously Presented) A process according to claim [[9]]4, wherein the enzymatic treatment is accomplished by using xylanases with high beta 1-4- xylanase (pentosanase) and/or beta-glucanase activity.

11. (Currently Amended) A protein fraction derived substantially from the ~~germ~~ germ-rich fraction and produced according to claim 1, wherein [[the]] said fraction contains at least 35% protein and 10% oil on dry matter basis and exhibits a high emulsifying capacity and an increased shelf life with regards to resistance to oxidation compared to the original bran, and that

[[the]] said fraction contains less than 5% fibre.

12. (Currently Amended) A protein fraction derived substantially from the ~~residual endosperm~~ endosperm-rich fraction and produced according to claim 1, wherein [[the]] said fraction contains at least 25% protein and 10% sugar and less than 3% oil and 3% fibre, and at least 25% soluble high-molecular weight non-starch polysaccharides of the groups beta-glucans for barley and oat and arabinoxylans for wheat, rice, rye and triticale.

13. (Currently Amended) A protein fraction according to claim 12, wherein liquid whey is incorporated in to [[the]] said fraction at levels varying from 20 to 80% by weight on dry matter basis, and that the final mixture is dried.

14. (Currently Amended) An insoluble ~~fibre~~ fibrous fraction produced according to claim 1, wherein the said fraction consists of cell wall components of bran in an amount of at least 85% and aleurone proteins in an amount of at least 10%, and is substantially free of gluten and starch, and ~~with~~ has a high water holding capacity of at least 6g water/g dry product.

15. (Currently Amended) A sugar fraction derived substantially from the endosperm-rich fraction produced according to claim 1, wherein the said fraction is ~~originated primarily from the residual~~ separated from the endosperm using size exclusion techniques and ~~it contains~~ containing more than 65% sugars, such as glucose, maltose and malto-triose on dry matter basis.

16. (Currently Amended) A protein fraction derived substantially from the aleurone ~~cells and~~

protein in the heavy phase produced according to claim 5, wherein [[the]] said fraction contains at least 35% protein and 10% oil, less than 5% insoluble fibre on dry matter basis, is substantially free of gluten and starch and with a high emulsifying capacity.

17. (Currently Amended) An insoluble fibre fraction produced according to claim 5, wherein [[the]] said fraction consists primarily of cell wall components with a ~~relative lower~~ relatively low hemicellulose content compared to the original cleaned cereal bran, said fraction being substantially free of gluten and starch (<1% on dry matter basis) and ~~with~~ having a high water holding capacity (>6g water/g dry product).

18. (Currently Amended) A soluble hemicellulose fraction produced according to claim 5, wherein [[the]] said fraction consists primarily of medium molecular weight hemicellulose preferably above 20kDa in an amount of at least 40% of the groups arabinoxylans from wheat, rye, rice and triticale, and beta-glucans from oat and barley, which also contains proteins in an amount of less than 10% and monosaccharides in an amount of less than 10%, and is substantially free of gluten and starch in an amount of less than 1% on dry matter basis.

19. (Currently Amended) A soluble oligosaccharide fraction produced according to claim 5, wherein [[the]] said fraction consists primarily of low molecular weight hemicellulose sub-units of below about 20kDa in an amount of at least 40% of the groups arabinoxylans from wheat, rye, rice and triticale, and beta-glucans from oat and barley, which also contains proteins in an amount of less than 10%, monosaccharides in an amount of less than 20%, lignans and related phenolics in an amount of less than 5%, and is substantially free of gluten and starch in an

amount of less than 1% on dry matter basis.

20. (Previously Presented) A protein fraction according to claim 11, wherein the oil can be optionally removed by conventional organic solvent extraction or preferably by supercritical carbon dioxide extraction to yield an oil fraction and a defatted protein fraction.

21. (Currently Amended) A protein fraction according to claim 16, wherein the oil optionally can be ~~optionally~~ removed by conventional organic solvent extraction or preferably by supercritical carbon dioxide extraction to yield an oil fraction and a defatted protein fraction.

22. (Previously Presented) An insoluble dietary fibre according to claim 14, used for recovery of cellulose, hemicellulose, lignin and lignans.

23. (Currently Amended) A germ oil produced in accordance with claim [[1]]20 containing sterols known to reduce the uptake of cholesterol in humans and intact vitamin E complex, sterols, lecithins, phospholipids and glycolipids.

24. (Currently Amended) A defatted germ rich protein produced in accordance with claim [[1]]20.

25. (Currently Amended) An aleurone-rich oil produced in accordance with claim [[1]]21.

26. (Currently Amended) A defatted aleurone-rich protein produced in accordance with claim

[[1]]21.

27. (Currently Amended) A protein fraction according to claim 11, wherein proteases are incorporated in to [[the]] said fraction in wet state and at controlled temperature and pH conditions, and the resulting protein hydrolysate has enhanced functionalities such as solubility, emulsifying and foaming capacities.

28. (Currently Amended) In feed and food applications a protein fraction according to claim 11 such that other protein products from vegetable and animal sources and used as texturizers, emulsifiers, fat binders or fat replacers are replaced.

29. (Canceled)

30. (Canceled)

31. (Currently Amended) ~~The use of~~ In feed and food applications, a protein fraction, ~~as described in~~ according to claim 12, ~~in food applications as a foam stabilising agent, whipping agent, water binder, gelling agent, and as a dietary supplement rich in soluble dietary fibre (beta-glucans and arabinoxylans) with associated~~ gelling, whipping, emulsifying, water binding, foam stabilizing properties and health benefits such as cholesterol-reducing effects ~~of the beta-glucans~~ in foods such as baked products, processed meats, dairy products, soups and sauces, high protein drinks and health drinks are increased.

32. (Canceled)

33. (Currently Amended) ~~The use of~~ In feed and food applications a fibre fraction, ~~as described in~~ according to claim 14, ~~in feed and food applications to replace~~ such that other insoluble fibrous products as a texturizing and water binding ~~additive~~ additives in processed foods particularly meat products, ~~and as a source~~ sources of dietary fibre in breakfast cereals, baked products and health products, ~~or as a raw material for further processing to extract remaining cellulose, hemicellulose, lignin and lignans~~ are replaced.

34. (Currently Amended) ~~The use of~~ a In feed and food applications, a soluble hemiceliulose, ~~as described in~~ according to claim 18, ~~in feed and food applications as a gellant, thickener,~~ such that gelling, thickening, foam ~~stabilizer~~ stabilizing, ~~emulsifier~~ emulsifying, water ~~binder~~ binding, and ~~as a dietary supplement rich in soluble dietary fibre, and in chemical applications, or as a raw material for further processing to obtain other functional hemicelluloses~~ gut-health beneficial properties in foods such as baked products, processed meats, dairy products, soups and sauces, high protein drinks and health drinks, and in chemical applications are increased.

35. (Canceled)

36. (Currently Amended) ~~The use of~~ In food and feed application, a soluble oligosaccharide, ~~as described in~~ according to claim 19, ~~in feed and food applications as a functional soluble dietary fibre or low calorie sweetener, or as a raw material for further processing to extract~~ such that health beneficial properties from antioxidants, pentosans-lignans and associated phenolics such

as ferulic acid~~, or as a feedstock for industrial fermentation~~ are increased.

37. (Currently Amended) ~~The use of~~ In confectionary formulations a soluble oligosaccharide, ~~as described in~~ according to claim 19, ~~in confectionery formulations in combination~~ such that when combined with glucose or other sugar syrups and further concentrated ~~to produce~~ a moisture stable ~~products~~ product is produced.

38. (Currently Amended) ~~The use of~~ In food and biomedical applications a soluble oligosaccharide, ~~as described in~~ according to claim 19, ~~in food and biomedical applications as a combined source~~ such that the sources of lignans and fermentable oligosaccharides are combined for the conversion of lignans into active cancer-reducing agents such as enterolactones.

39. (Canceled)

40. (Withdrawn) A set up for carrying out the process according to claim 1, wherein it comprises a hydrolysis vessel, a wet mill, a heat exchange for enzymatic inactivation, decanters, a holding tank, an ultra-filter, and optionally at least an evaporator, and dryers.

41. (Withdrawn) A set up for carrying out the process according to claim 5, wherein it comprises a hydrolysis vessels, a wet mill, a heat exchange for enzymatic inactivation, decanters, a holding tank, an ultra-filter, and optionally evaporators, and dryers.

42. (Currently Amended) A process according to claim 1, wherein the first enzymatic treatment

is carried out for less than 3 hours at a pH of 4 to 7.5 and at a temperature of from 50 to 90°C, at an enzymatic activity of at least 1 IU/g of substrate, preferably 200 to 1500 IU/g of substrate.

43. (Currently Amended) A process according to claim [[5]] 1, wherein the second enzymatic treatment is carried out for less than 3 hours at a pH of 4 to 7, preferably 4.5-5.5, and at a temperature of from 35 to 80°C, at an enzymatic activity of at least 1 IUlg of substrate, preferably 200 to 1500 IU/g of substrate.

44. (New) A protein fraction according to claim 10, wherein proteases are incorporated into said fraction in a wet state and at controlled temperature and pH conditions, and the resulting protein hydrolysate has enhanced functionalities such as solubility, emulsifying and foaming capacities.